

CLAIMS

What is claimed as new and desired to be protected by Letters Patent of the United States is:

1. An apparatus for testing image sensors, said apparatus comprising:

a digital light processing control system capable of generating digital test images and directing said images onto at least one image sensor; and

an image sensor signal detector.
2. The apparatus of claim 1, wherein said test images are static images.
3. The apparatus of claim 1, wherein said test images are dynamic images.
4. The apparatus of claim 3, wherein said dynamic test images comprise one or more images selected from the group consisting of marching rows, marching diagonals, and alternating checkerboards.
5. The apparatus of claim 1, wherein said digital light processing control system comprises a light source; a digital micromirror device, for converting light from said light source into a digital test image; collimating optics, for directing light from said light source onto said digital micromirror device; and focusing optics, for focusing said digital test image onto an image sensor.

6. The apparatus of claim 5, wherein said light source is a uniform DC light source.
7. The apparatus of claim 5, wherein said digital light processing control system further comprises filter optics, for filtering light from said light source before it is directed to said digital micromirror device.
8. The apparatus of claim 1, wherein said digital light processing control system is capable of generating a plurality digital test images.
9. The apparatus of claim 8, wherein said digital light processing control system further comprises focusing optics capable of splitting said digital test images into a plurality of identical images.
10. An apparatus for simultaneously testing a plurality of image sensors, said apparatus comprising:

a digital light processing control system capable of generating digital test images and simultaneously directing said images onto a plurality of image sensors; and

an image sensor signal detector.
11. The apparatus of claim 10, wherein said test images are static images.
12. The apparatus of claim 10, wherein said test images are dynamic images.
13. The apparatus of claim 10, wherein said digital light processing control system comprises a light source; a digital micromirror

device, for converting light from said light source into a digital test image; collimating optics, for directing light from said light source onto said digital micromirror device; and focusing optics, for focusing said digital test image onto image sensors.

14. The apparatus of claim 10, wherein said digital light processing control system is capable of testing a plurality of image sensors using a single test image.
15. The apparatus of claim 10, wherein said digital light processing control system is capable of testing a plurality of image sensors using a plurality of test images.
16. The apparatus of claim 13, wherein said focusing optics are capable of splitting said digital test images into a plurality of identical images.
17. The apparatus of claim 13, wherein said light source is a uniform DC light source.
18. An apparatus for automated image sensor testing, said apparatus comprising:

a digital light processing control system comprising:

a light source;

a digital micromirror device, for converting light from said light source into at least one of a static and dynamic digital test image;

collimating optics, for directing light from said light source onto said digital micromirror device; and

focusing optics, for focusing said digital test images
onto an image sensor device under test;

an image sensor signal detector comprising:

an input means, for inputting a continuous signal from
an image sensor device under test; and

a means for automatically comparing said signal from an
image sensor device under test to said test images
inputted by said digital light processing control system.

19. The apparatus of claim 18, wherein said digital light processing control system is capable of testing a plurality of image sensors using a single test image.
20. The apparatus of claim 18, wherein said digital light processing control system is capable of testing a plurality of image sensors using a plurality of test images.
21. The apparatus of claim 20, wherein said focusing optics are capable of splitting said test image into a plurality of test images.
22. A method of testing image sensors comprising:

generating a digital test image;

applying said digital image to at least one image sensor;

inputting a first signal from said image sensor; and

correlating said digital test image to said first signal from said image sensor.

23. The method of claim 22, wherein said test images are static images.
24. The method of claim 22, wherein said test images are dynamic images.
25. The method of claim 22, wherein said dynamic test images comprise one or more images selected from the group consisting of marching rows, marching diagonals, and alternating checkerboards
26. The method of claim 22, wherein generating a digital test image is performed by a digital light processing control system.
27. The method of claim 26, wherein said digital light processing control system comprises a light source; a digital micromirror device, for converting light from said light source into a digital test image; collimating optics, for directing light from said light source onto said digital micromirror device; and focusing optics, for focusing said digital test image onto an image sensor.
28. The method of claim 27, wherein said digital light processing control system further comprises filter optics, for filtering light from said light source before it is directed to said digital micromirror device.
29. The method of claim 22, wherein inputting a first signal from said images sensors and correlating said digital test image to said first signal are performed by an image sensor signal detector.

30. The method of claim 22, wherein applying said test image to an image sensor further comprises applying said test image to a plurality of image sensors.
31. The method of claim 22, wherein generating a digital test image further comprises generating a plurality of digital test images.
32. The method of claim 27, wherein said focusing optics are capable of splitting said digital test images into a plurality of identical test images.
33. A method of simultaneously testing a plurality of image sensors comprising:

generating a plurality of digital test images using a digital light processing control system;

applying said digital images to a plurality of image sensors;

inputting a plurality of signals from said image sensors; and

correlating said input digital test images to said input signals from said image sensors.
34. The apparatus of claim 33, wherein said test images are static images.
35. The apparatus of claim 33, wherein said test images are dynamic images.
36. The method of claim 33, wherein said digital light processing control system comprises a light source; a digital micromirror device, for converting light from said light source into a digital test image; collimating optics, for directing light from said light

source onto said digital micromirror device; and focusing optics, for focusing said digital test image onto an image sensor.

37. The method of claim 36, wherein said digital light processing control system further comprises filter optics, for filtering light from said light source before it is directed to said digital micromirror device.
38. The method of claim 36, wherein said focusing optics are capable of splitting said digital test images into a plurality of identical test images.
39. The method of claim 33, wherein inputting a first signal from said images sensors and correlating said digital test image to said first signal are performed by an image sensor signal detector.